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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KANG, INSUN

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/749,203	RUTHS ET AL.	
	Examiner	Art Unit	
	Insun Kang	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This action is in response to the amendment filed 6/20/2005.
2. As per applicant's request, claims 1-8, 10-11, 14-27, 29-30, 33, 35-43, and 46-47 have been amended. Claims 1-52 are pending in the application.

Specification

3. The objection to the specification has been withdrawn due to the amendment to the Specification.

Claim Objections

4. The objection to claims 2 and 4 has been withdrawn due to the amendment to the claims.

Claim Rejections - 35 USC § 112

5. The rejection to claims 1-52 has been withdrawn due to the amendment to the claims.

Claim Rejections - 35 USC § 101

6. The rejection to claims 36-39 has been withdrawn due to the amendment to the claims.

Claim Rejections - 35 USC § 102

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7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitchell et al. (US Patent 5,872,973) herein after referred to as "Mitchell."

Per claim 1:

Mitchell discloses:

- code to create a shared environment ("a visual programming environment supporting the specification of dynamic linkages (connections) of objects," col. 6 lines 38-40)
- an object-oriented programming environment distributed across multiple computer systems and a plurality of objects ("dynamic binding...in the objects being connected," abstract; col. 6 lines 25-37)
- code to create an object ("The ability to instantiate objects," col. 3 lines 14)
- the object exposed to other objects in the shared environment ("dependencies created between the program's objects," col. 5 lines 62-67)
- a set of behavior logics ("the functions that the object performs," col. 7 lines 5-12)
- each member of the set of behavior logics operable to cause the object to perform a task ("the functions that the object performs," col. 7 lines 5-12)
- a receiver logic, operable to receive a Command from another object in the shared environment("dynamically link one or more of the members of one class

to one or more of the members of another class...fully dynamic binding," col. 7 lines 45-57)

- the receiver logic is externally invokable ("external object mapping," col. 11 lines 28-38),
 - mapping logic able to map a command received at the receiver logic, on the basis of a characteristic of the command, to a selected behavior logic for execution of the selected behavior logic ("select the new connection command...mapping dialog a list of all the connections that can be used to map those two sets together " col. 12 lines 18-48)
- as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, Mitchell teaches:

The set of Behavior logics and the mapping logic are private to the object ("mappers may only attach to private members in the context of an internal object mapping for the object itself Members," col. 25 lines 18-30) as claimed.

Per claim 3:

The rejection of claim 1 is incorporated, and further, Mitchell teaches:

- the set of Behavior logics has no members ("non-member version," col. 11 lines 39-56)
- as claimed.

Per claim 4:

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The rejection of claim 1 is incorporated, and further, Mitchell teaches:

- a default Behavior logic, operable to cause the object to perform a default task
("default implementations," col. 28 lines 17-40)

, the default Behavior logic private to the object and the default behavior logic is
executed if the received command is not mapped to another behavior logic (col. 25 lines
18-30; col. 28 lines 17-40) as claimed.

Per claim 5:

The rejection of claim 1 is incorporated, and further, Mitchell teaches that a command
can be mapped to multiple Behavior logics ("For those mappers that need to tie multiple
members," col. 20 lines 28-48) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, Mitchell teaches:

an authentication data, the authentication data providable to other objects for
authenticating Commands received from the other objects by the code to receive the
Command (col. 12 lines 19-47) as claimed.

Per claim 7:

The rejection of claim 6 is incorporated, and further, Mitchell teaches:

the authentication data wherein the mapping of a command to a behavior logic may be
restricted in response to the authentication data(col. 12 lines 19-47) as claimed.

Per claim 8:

The rejection of claim 1 is incorporated, and further, Mitchell teaches:

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- code to create a first Shadow of the object ("The proxy object is constructed with a connection object," col. 15 lines 51-67), the first Shadow of the object operable to communicate with the object ("several proxy objects communicating with objects on the same machine," col. 16 lines 10-28), the first Shadow of the object being informed of changes to the object and the object being informed of changes to the first Shadow of the object (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 9:

The rejection of claim 8 is incorporated, and further, Mitchell teaches:

- the first Shadow of the object is a copy of the object("The proxy object is constructed with a connection object," col. 15 lines 51-67)

Per claim 10:

The rejection of claim 8 is incorporated, and further, Mitchell teaches that the mapping of commands to behavior logics of the first Shadow of the object differs from the mapping of commands to behavior logics of the object(col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 11:

The rejection of claim 8 is incorporated, and further, Mitchell teaches:

- code to create a plurality of Shadows of the object operable to communicate with the object and the first Shadow of the object ("several proxy objects communicating with objects on the same machine," col. 16 lines 10-28), the object and the first Shadow of the object being informed of changes to any of the plurality of Shadows of the object

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and each of the plurality of Shadows of the object being informed of changes to the object and changes to the first Shadow of the object (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 12:

The rejection of claim 8 is incorporated, and further, Mitchell teaches:

code to promote the first Shadow of the object into a new object (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 13:

The rejection of claim 12 is incorporated, and further, Mitchell teaches:

- code to create a plurality of Shadows of the object("several proxy objects communicating with objects on the same machine," col. 16 lines 10-28), wherein executing the code to promote the first Shadow of the object into a new object converts each of the plurality of Shadows of the object into a Shadow of the new object (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 14:

The rejection of claim 12 is incorporated, and further, Mitchell teaches:

a plurality of computer systems, the object on a computer systems of the plurality of computer systems, the first Shadow of the object on a second computer systems of the plurality of computer systems and code to manage the plurality of computer systems (col. 8 lines 33-41), executing the code to promote the first Shadow of the object to a

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new object if the first computer systems experiences a predetermined condition (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 15:

The rejection of claim 1 is incorporated, and further, Mitchell teaches:

- code to modify the mapping logic to modify the mapping of commands to behavior logics (col. 28 lines 17-40) as claimed.

Per claim 16:

The rejection of claim 1 is incorporated, and further, Mitchell teaches:

- a plurality of computer systems, the object having a location on one of the plurality of computer systems, the object acts independently of its location (col. 8 lines 33-41) as claimed.

Per claim 17:

The rejection of claim 1 is incorporated, and further, Mitchell teaches code to configure the mapping logic from an external data source ("external object mapping," col. 11 lines 28-38),

Per claim 18:

The rejection of claim 1 is incorporated, and further, Mitchell teaches the software is capable of using any networking protocol (col. 7 lines 1-12) as claimed.

Per claim 36:

Mitchell discloses:

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-defining within an object-oriented programming environment a plurality of objects("dynamic binding...in the objects being connected," abstract)

- each object of the plurality of objects operable to receive and execute Commands("select the new connection command," col. 12 lines 18-48)

-each object exposed to each other object of the plurality of objects("dependencies created between the program's objects," col. 5 lines 62-67)

-creating a set of Behavior logics for an object("The ability to instantiate objects," col. 3 lines 14)

-mapping members of a first set of Commands to members of the set of Behavior logics wherein the mapping function of an object is included within the object("select the new connection command...mapping dialog a list of all the connections that can be used to map those two sets together " col. 12 lines 18-48)

-mapping any Command not a member of the first set of Commands to a default Behavior logic ("default implementations," col. 28 lines 17-40)

-configuring a receiver logic to receive a Command and initiate the execution of a Behavior logic corresponding to the Command in response to the mapping of the command to the behavior logic(Dynamic binding ... during execution of the program an object can be manipulated using the names of its members," col. 29 lines 55-67)

as claimed.

Per claim 37:

The rejection of claim 36 is incorporated, and further, Mitchell teaches

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- creating a Shadow of an object of the plurality of objects, the Shadow configured such that sending a Command to the Shadow causes the object to act as if the Command had been sent to the object (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 38:

The rejection of claim 37 is incorporated, and further, Mitchell teaches

- each of the plurality of objects having a location on one of a plurality of computer systems, each of the plurality of objects being independent of the location of each other of the plurality of objects (col. 8 lines 33-41) as claimed.

Per claim 39:

The rejection of claim 38 is incorporated, and further, Mitchell teaches

- a Shadow of each of the plurality of objects automatically created on each of the plurality of servers other than the server on which the object is located (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claims 19-35, they are the method versions of claims 1-18 and 36, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-19 and 36 above.

Per claims 40-42, they are the processor-based system versions of claims 4 and 5, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 4 and 5 above.

Per claim 43:

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The rejection of claim 40 is incorporated, and further, Mitchell teaches

- an input device coupled to the first processor, wherein a first object of the plurality of objects is coupled to the input device such that manipulation of the input device sends a Command from the first object to a second object of the plurality of objects without identifying the input device, the second object of the plurality of objects acting responsive to the Command independent of the nature of the input device (col. 26 lines 6-51) as claimed.

Per claim 44:

The rejection of claim 40 is incorporated, and further, Mitchell teaches

- an output device coupled to the first processor, wherein a first object of the plurality of objects is coupled to the input device such that a first object is capable of rendering a second object on the output device without identifying the output device to the second object(col. 26 lines 15-50) as claimed.

Per claim 45:

The rejection of claim 40 is incorporated, and further, Mitchell teaches

-a second processor; a network, coupled to the first processor and the second processor("Client/Server Networking, col. 5 lines 20-53); a second storage device coupled to the second processor, the second storage device containing the software; the software further comprising: code to connect the shared environment to the network (col. 6 lines 38-40)

code to create a Shadow on the second processor of the object on the first processor, the Shadow and the object communicating with each other to inform the Shadow of

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changes to the object and the object of changes to the Shadow(col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 46:

Mitchell teaches:

-a distributed system ("Networking objects," col. 5 lines 55-67)

a plurality of shared environments ,each of the plurality of shared environments comprising an object-oriented programming environment distributed across ...a plurality of objects executing on a different computer of the plurality of computers(i.e. "The architecture sought is a server/server[client] architecture between objects...programs...on machines connected over a network," col. 6 lines 25-38; "a visual programming environment supporting the specification of dynamic linkages (connections) of objects," col. 6 lines 38-40; "dynamic binding...in the objects being connected," abstract)

a CommandReceiver class (Fig 1-3)

a set of Behavior private methods, each member of the set of Behavior methods adapted to cause instantiations of the CommandReceiver class to perform a task(col. 12 lines 18-48)

- an executeCommand public method (col. 29 lines 55-67), operable to receive a Command from an object in the shared environment (col. 6 lines 38-40), code to receive the Command; code to select a Behavior private method of the set of Behavior private methods selected corresponding to a characteristic of the Command from a

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Command-Behavior mapping ("select the new connection command...mapping dialog a list of all the connections that can be used to map those two sets together" col. 12 lines 18-48)

and code to execute the selected Behavior private method; and a Kernel subclass of the CommandReceiver class, the Kernel class comprising: code to instantiate objects of the CommandReceiver class(Dynamic binding ...during execution of the program an object can be manipulated using the names of its members," col. 29 lines 55-67)

code to destroy objects of the CommandReceiver class ("garbage collection," col. 17, lines 29-48) as claimed.

Per claim 47:

The rejection of claim 46 is incorporated, and further, Mitchell teaches

- a Pawn subclass of the CommandReceiver class, the Pawn subclass comprising: code to register an instantiation of a Pawn with a Kernel object of the Kernel subclass; code to determine whether an instantiation of the Pawn subclass is a real Pawn or a Shadow Pawn of a real Pawn, and code to send State information about an instantiation of the Pawn subclass, wherein Commands received by Shadow Pawns are sent to the real Pawn corresponding to the Shadow Pawn (col 15 lines 21-67; col 16 lines 1-26) as claimed.

Per claim 48:

The rejection of claim 46 is incorporated, and further, Mitchell teaches

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- a ControlDevice subclass of the CommandReceiver class corresponding to an input device for receiving input from the input device and sending Commands to other CommandReceiver objects(col. 26 lines 15-50) as claimed

Per claim 49:

The rejection of claim 46 is incorporated, and further, Mitchell teaches
a Construct subclass of the CommandReceiver class corresponding to an output device for rendering objects of the CommandReceiver class with graphical attributes (col. 26 lines 15-50) as claimed.

Per claim 50:

The rejection of claim 46 is incorporated, and further, Mitchell teaches
- a Console subclass of the CommandReceiver class for allowing a user of the distributed system to instantiate, modify, and destroy objects, and for allowing a user to send Commands to CommandReceiver objects (col. 29 lines 55-67; col. 29 lines 55-67; "garbage collection," col. 17, lines 29-48) as claimed.

Per claim 51:

The rejection of claim 46 is incorporated, and further, Mitchell teaches
-a Nengine subclass of the CommandReceiver class for serializing and deserializing CommandReceiver objects, transmitting and receiving the serialized CommandReceiver object across a network to a Nengine in another shared environment of the distributed system(col. 6 lines 38-40) as claimed.

Per claim 52:

The rejection of claim 51 is incorporated, and further, Mitchell teaches

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-a Node subclass of the CommandReceiver class (col. 27 lines 18-28), an instantiation of the Node subclass corresponding to a Pawn object for representing the Pawn object to a Nengine object for communicating State information corresponding to a Pawn to Shadow Pawns of the Pawn and for communicating Commands sent to a Shadow Pawn to the real Pawn corresponding to the Shadow Pawn(col 15 lines 21-67; col 16 lines 1-26) as claimed.

Response to Arguments

9. Applicant's arguments filed 11/3/2004 have been fully considered but they are not persuasive.

Per claim 46:

The Applicant states that Mitchell does not disclose or suggest the limitations in the claims:

1) There is no disclosure in Mitchell of multiple shared environments.

In response, Mitchell discloses a sever/[client] architecture between objects...between programs and or processes running on machines connected over a network (col. 6 lines 30-38)." Further, the claim does not specifically recite what "multiple shared environments" mean. Therefore, Mitchell's client/server architecture connected over a network can be considered as "multiple shared environments." If applicant means anything more, this must be brought out in the claims to further clarify the invention.

2) Mitchell does not disclose "code to instantiate objects of the CommandReceiver class" and "code to destroy objects of the CommandReceiver class."

In response, Mitchell discloses instantiation of objects ("object instances," abstract; "instantiating and destroying these connections between objects during program execution," col. 6 lines 50-53). An object instance is an occurrence of the object created during the execution of an application. Mitchell discloses destroying an object ("if that were the last reference to the other object, it would be deleted... Reference counted pointers are an implementation of... garbage collection," col. 17 lines 28-49). Therefore, if no references remain, the object is destroyed. If applicant means anything more, this must be brought out in the claims to further clarify the invention.

Per claims 1 and 40:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., mapping function within the object itself, allowing each object to function as an autonomous unit such that the object can be moved within the computer systems of the shared environment and function independently of its location in the shared environment without the necessity of defining relationships between the object and other objects) are not recited in the rejected claim(s). Although the claims are

interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Per claims 19 and 36:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a command-behavior mapping function that is included within the target object, the mapping function within the object allows the object to be autonomous and further allow the object to function within the shared environment without reference to the location of the object in the shared environment and without the necessity of defining relationships between the object and other objects) are not recited in the rejected claim(s). The claims merely recite "mapping logic within the object that maps commands to behavior logics. The claims are not recited in a way to indicate that the mapping logic is included within each object allowing the objects to function within the shared environment without reference to the location of the objects and without the necessity of defining relationships with other objects. Therefore, Mitchell's mapping objects contain a mapping logic that provides dynamical links between objects. Accordingly, the mapping logic is within the mapping objects. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Per claims 19 and 36: If applicant means anything more, this must be brought out in the claims to further clarify the invention.

Conclusion

10. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 7:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

I. Kang
Patent Examiner
AU2193



ANIL KHATRI
PRIMARY EXAMINER